



NAFEMS NORDIC CONFERENCE

22-23 May 2024 | Gothenburg, Sweden

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CONFERENCE AGENDA

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Room A/B

Session 1 A/B – Keynote & plenary presentations 1

- 10:30 **Welcome and NAFEMS Introduction**
NAFEMS NORDIC Steering Committee, T. Morris, A. R. Oswald (NAFEMS)
- 10:40 **Keynote Presentation: Simulation-Based Decision Support for Transport System Development**
M. Eek (VTI The Swedish National Road and Transport Research Institute)
- 11:15 **Keynote Presentation: From CAE to SAE - From Computer- to Software Aided Engineering**
E. Drenth (Volvo Autonomous Solutions)
- 11:50 Lunch break

Room A/B

Session 2 A/B – AI/ML - 1

- 12:50 **AI in FEM Simulation: Accelerated Optimization of Plastic Snap Hook Designs in the Automotive Industry**
F. Dirisamer (Digital Physics AI)
- 13:15 **Machine Learning Optimization and Quick Verification of an Electric Vehicle Rocker Design**
A. Papadopoulos, D. Drougkas (BETA CAE Systems)
- 13:40 **Machine Learning to Empower Engineering Organizations: Technology & Applications**
A. Timofeev, T. Le Clerc, T. Margaritis (Neural Concept)
- 14:05 **Hydrogen Storage 3D Architecture Automated Generation with AI**
J.-P. Roux (DessLA Technologies); H. Massé (OP Mobility)

14:30 Break

Session 3 A/B – Fatigue / Fracture / Durability

- 15:15 **The Discontinuous Strain Method: Accurately Representing Fatigue and Failure**
L. Herrmann, A. Daneshyar (Technical Univ. of Munich); S. Kollmannsberger (Univ. of Weimar)
- 15:40 **Enhanced Low Cycle Fatigue Analysis**
G. Spindelberger, K. Hofwimmer (Magna Powertrain Engineering Center Steyr)
- 16:05 **Integration of Fatigue Analysis in FEA Solver for a Faster and More Reliable Process**
R. Helfrich, M. Klein (Intes); L. Dastugue (Intes France)
- 16:30 **Fatigue Life Investigation as a Part of a Complete Design Optimization Process**
G. Korbetis, C. Tegos (BETA CAE Systems)

16:55 Break

Session 4 A/B – AI/ML 3 - HPC

- 17:35 **Enhancing Aircraft Safety Through Data-Driven Reduced Order Modelling for Birdstrike Analysis**
R. Lombardi, C. Sahin (Noesis Solutions); L. Hootsmans, W. Van de Waerdt (GKN Fokker Aerospace)
- 18:00 **Automated Report Generation: Utilizing Machine Learning and Python for Automation in FEA**
A. Alper Akis (Enabl)
- 18:25 **Enabling Specialized Architectures for High-Performance Computing (HPC)**
S. Zakrzewski (Rescale)
- 18:50 End of presentation day 1

18:50 **Get together in the exhibition hall: Networking and discussion with beverages and snacks**

Room C

Session 2 C – CFD / MBD

- Evaluation of the Munk Moment on a Wind Assisted Oil Tanker with CFD**
A. Ommundsen (cDynamics)
- Electric Motor Direct Cooling: Assessment of Coolant Flowrate and Viscosity on Cooling Efficiency**
M. Galbiati (Particleworks Europe)
- ODS&ODF - A Comprehensive Approach to Evaluate the Vehicle Stiffness using MBD**
J. Weber, P. Ugale (Zeekr Technology Europe); M. Pena, J. Bäcklund, P. Appelgren (Beta CAE Nordic); M. Berggren (AFRY); H. Marberg (Marberg Engineering)
- Analysing Ride Comfort in Realtime by Integrating Flexible Body in White**
A. Chauhan (Dassault Systemes)

Session 3 C – AI/ML 2

**Workshop:
AI for Simulation Engineers**
Moderated by M. Kassera (YasAI)

Session 4 C – Materials / Manufacturing

- Fracture Modeling of Layered Composites in a Specialized Off-Axis Finite Element Framework**
L. Herrmann*, F. Duddeck (Technical Univ. of Munich); L. P. Mikkelsen, B. Nyvang Legarth, C. Niordson (DTU)
- Upgrade Parts' Crashworthiness by Exploiting Injection Molding Manufacturing Effects**
P. Fotopoulos (BETA CAE Systems); M. Richter (Matfem Ingenieurgesellschaft)
- Post-Buckling Analysis of Composite Stiffened Panels using FEM**
H. K. Almaz, S. Giovanni Pereira Castro (TU Delft)

Room A/B

Session 5 A/B – Keynote & plenary presentations 2

- 08:30 **Welcome and NAFEMS Introduction**
NAFEMS NORDIC Steering Committee, T. Morris, A. R. Oswald (NAFEMS)
- 08:35 **Keynote Presentation: Simulation Driven Development at Volvo Car Corp.**
H. Hasselblad (Volvo Cars)
- 09:10 **Highlights from Project TRUSTIT (Towards a Rational Approach to Credibility of Numerical Simulations in Industrial Applications)**
F. Santandrea (RISE Research Institutes of Sweden)
- 09:35 Break

Room A/B

Session 6 A/B – Multiphysics

- 10:15 **EV Battery Structural Simulation at Volvo Cars**
P. Gustavsson (Volvo Cars)
- 10:40 **Design Space Exploration of Battery Pack / Body in White Integration**
F. Rosenlund, T. Khalitov, K. Govindarajan, M. Lampin (Siemens Digital Industries Software)
- 11:05 **Strongly Coupled Multiphysics Simulation of a Loudspeaker Driver using a Multiharmonic Approach**
A. Deshmukh, A. Halbach, B. Khouya, R. K. Nagaraja, V. Lahtinen (Quanscient)
- 11:30 **Electric Drive Virtual Development and Thermal Management – Project Presentation**
M. Hood, F. Colas, D. Nunes, J. Brunel (Siemens Digital Industries Software)
- 11:55 Lunch Break

Session 7 A/B – Verification & Validation

- 13:00 **Building Simulation Models Credibility: What Gain can we Expect from Test-Simulation Data Fusion in Solid Mechanics?**
P. Baudoin, F. Mathieu (Eikosim); N. Swiergiel (ArianeGroup)
- 13:25 **EVIDENT: Investigating Model Validation Approaches**
E. Dartfeldt, T. Sjögren (RISE Research Institutes of Sweden); T. Bogdanoff, J. Olofsson (Jönköping Univ.)
- 13:50 **Structural Numerical and Experimental Investigation of Urea Mixer Component Thickness to Reduce Cost, Weight and Thermal Mass**
H. K. Kuna (Dinex)
- 14:15 Break

Session 8 A/B – Plenary presentations 3 / Farewell

- 14:45 **Modern Digital Twin Solutions - Overview and Applications**
P.-O. Jansell (Altair Engineering)
- 15:10 **Recent Advances in Non-linear Industrial Non-parametric Optimization**
A. Jurinic (Dassault Systemes)
- 15:35 **Stability Analysis and Error Correction Procedure for Optimization Mathematical Problems**
M. Alshbool (Zayed Univ.)
- 16:00 **Summary of Key Outcomes from the NAFEMS NORDIC 2024 Regional Conference / Farewell**
NAFEMS Nordic Steering Committee
- 16:10 End of Conference

Room C

Session 6 C – Uncertainty Quantification

- Workshop:**
A Human Friendly Introduction to Uncertainty Quantification in Engineering Simulations
Moderated by F. Santandrea (RISE)

Session 7 C – AI/ML 4

- Workshop:**
Project Planning for AI-supported CAE
Moderated by SustainedBizz

EXHIBITORS

- Altair Engineering
- atNorth
- BETA CAE Nordic
- Dassault Systèmes
- EikoSim
- Hexagon Manufacturing Intelligence
- Magna Powertrain Engineering Center Steyr
- NAFEMS
- Noesis Solutions
- Particleworks Europe
- Quanscient
- Rescale
- Siemens
- sustainedBIZZ



Safe the date!

Abstract submission deadline 22 Nov. 2024

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